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THE PLANT DISEASE REPORTER

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Division of Mycology and Disease Survey

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

Volume XXIV Number 5

March 15, 1940

The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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THE PLANT DISEASE SURVEY

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GRASS DISEASES OCCURRING IN THE PULLMAN NURSERY UNIT OF THE SOIL CONSERVATION NURSERIES, PULLMAN, WASHINGTON, DURING 1939

George W. Fischer

In the indices which follow there are summarized the data resulting from a systematic row by row check-up on the grass diseases occurring in the Pullman Nursery Unit of the Soil Conservation Nurseries during the 1939 season. It is the writer's intention to take data similarly each season, with the hope of accumulating much valuable data concerning the identity and prevalence of grass diseases in this region, their seasonal variation as governed by variations in climatic conditions, and the general disease reaction of the many different accessions of grasses over a period of years. It seems probable that the diseases occurring in this nursery unit represent, or will eventually represent, the great majority of the grass diseases prevalent in this "dry-land" area of the Pacific Northwest east of the Cascades. Many of the grasses are species not native to this country. An opportunity is afforded in these nurseries to observe the reaction of these foreign plant introductions to some of the grass diseases prevalent in this region.

Since many species of grasses in these nurseries are represented by several to many accessions, an opportunity was presented for observations of varietal reaction of these grasses to disease, and many instances of what at least appears to be varietal reaction were observed. Over a period of time such data could be the foundation for grass improvement work on a breeding basis.

In the same row, and of the same accession, many instances were observed of marked variability of individual plants in their reaction to various diseases, particularly powdery mildew and the rusts. Such data might form the basis for grass improvement by plant selection.

The writer is indebted to Mr. John L. Schwendiman, Assistant Agronomist and Manager of the Pullman Nursery Unit, for carefully checking these data for correct identity of the grasses.

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*Stem smut, Ustilago hypodytes
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[1] This is apparently a new disease of grasses and cereals. The culms make a full bend at or just above the last node until they hang upside down, more or less parallel with the portion of the culm below the bend. The bent region resembles a hair pin.

[2] New hosts or new diseases are indicated with the asterisk (*).

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Elymus pseudoagropyron
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3/ First report from U. S. There has been one previous report of U. hordei on rye from Russia by Jackzewski. (Abstract in Rev. Appl. Myc. 5: 733. 1926.)

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*Elymus junceus
*Elymus pseudoagropyron
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Agropyron pauciflorum
*Agropyron striatum
Agrostis alba
Agrostis stolonifera
Elymus canadensis
Elymus glaucus
Poa palustris

(Division of Forage Crops and Diseases, Soil Conservation Service, and Washington Agricultural Experiment Station, Pullman).

OCCURRENCE OF BACTERIAL RING ROT ON POTATO IN WASHINGTON

Glenn A. Huber

The facterial ring rot of potato (Phytomonas sepedonica) has not been reported heretofore as occurring in the State of Washington. During the past 2 years the State Department of Agriculture and the Department of Plant Pathology at the Western Washington Experiment Station have been cooperating in a survey of potato fields, storage houses, and shipments (both certified seed and commercial stock) for the presence of the ring rot disease.

In the fall of 1939, one lot of potatoes, Netted Gem variety, from Ellensburg, a commercial growing area, showed evidence of bacterial ring rot. After the suspicious lot was found, Mr. Charles D. Gaines, State Seed Inspector, immediately made a survey of the stored potato stock in that area and sent several samples to me for diagnosis. The diseased tubers showed symptoms typical of those described by investigators working with the bacterial ring rot. Stained smears from isolations and diseased tubers revealed the presence of great numbers of Gram-positive bacteria. Partially infected tubers and apparently healthy tubers inoculated with the causal organism were planted in the greenhouse to further verify our diagnosis. An examination of this stock, made March 7, 1940, revealed typical vine symptoms of bacterial ring rot.

On March 5, 1940, Mr. William Shaw, District Horticulturist of the State Department of Agriculture, brought in a sample of Irish Cobbler tubers that showed typical symptoms of the disease. The parent stock was grown in the Ellensburg district and shipped to Auburn, near Seattle, in 1939, and used as seed for commercial stock. An examination of this stock, March 7, revealed approximately 10 percent of the tubers infected with bacterial ring rot. Steps are being taken to prevent any of this stock from being planted.

Since no evidence of bacterial ring rot has been observed in the certified seed-producing areas of the State, the growers are cooperating with the State Department of Agriculture to prevent the introduction of the disease into those areas, and are making an effort to eradicate the disease in the area where the disease has been found.

(Western Washington Experiment Station, Puyallup. March 9).

SOME RECENT OBSERVATIONS AND REPORTS ON EELGRASS IN MAINE

F. H. Steinmetz and J. S. Gashwiler

Eelgrass (Zostera marina L. var. stenophylla Aschers. & Grabner) has long been known as an important salt-water plant. Its vegetative material was the chief winter food of the Atlantic brant (Branta bernicla) and it also provided extensive cover for shellfish and fish. In addition, the plants were harvested in large amounts for bedding, packing, and insulation material before the almost total disappearance along the Atlantic coast recently.

Although observations were made and reported concerning the disappearance of eelgrass in the vicinity of Long Island in 1928, few people were impressed with the seriousness of the situation until 1932. Cottam (Plant Disease Reporter 17: 46-53. June 1, 1933) gave an excellent review of the eelgrass situation along the Atlantic coast at that time. He reported the almost complete disappearance of the plant in coastal waters and mentioned the presence of some seedlings along the New Jersey coast in previously denuded areas. In addition, Dr. Cottam refers to a statement by Dr. Neil E. Stevens who reported that in September, 1931, eelgrass was abundant in Buttermilk Cove, Buzzards Bay, Massachusetts, but that in September, 1932, the plant had completely disappeared. Two years later Cottam (PDR 19: 230-231. Sept. 1, 1935) reported an encouraging growth of the plant at certain points in Nova Scotia and New Brunswick, Canada, and at Cobscook Bay, Washington County, Maine. In 1937 Lynch and Cottam (Wildlife Research and Management Leaflet BS-94) found that eelgrass was persisting at several points along the coast of Maine and New Hampshire. Stevens (PDR 19: 232, 1935) stated that on May 6, 1933, seedlings were noted in Buttermilk Cove, while in July, 1935 (PDR 20: 279-281. Oct. 1, 1936), small patches of the plant were observed in the same area. Renn (Ecology 18: 323-325, 1937) indicated that eelgrass was becoming re-established in the coastal waters from Long Island, New York, to Narragansett Bay, Rhode Island.

The following incidental observations on eelgrass in Maine were made by the senior author in conjunction with his routine field work. In July, 1937, a small bed of vigorous eelgrass was observed growing in 5 feet of water at low tide near Thomas Island, in Frenchman Bay, Hancock County, Maine. During July, 1938, fragments of the plant were observed on the beach at Lamoine, Maine. Plants with immature fruit were found generally distributed on the mud flats of Hatch's Cove, Castine, Maine, in October, 1938. In September, 1939, eelgrass was found growing even more luxuriantly on the above area. Scattered stands of the plant were observed at 2 points in the vicinity of Mt. Desert Ferry, Trenton, Maine, during August, 1939. A few days later a dense, vigorous growing stand several square rods in area was observed at the head of Somes Sound, Mt. Desert, Maine. During October, 1939, a member of the staff of the Maine

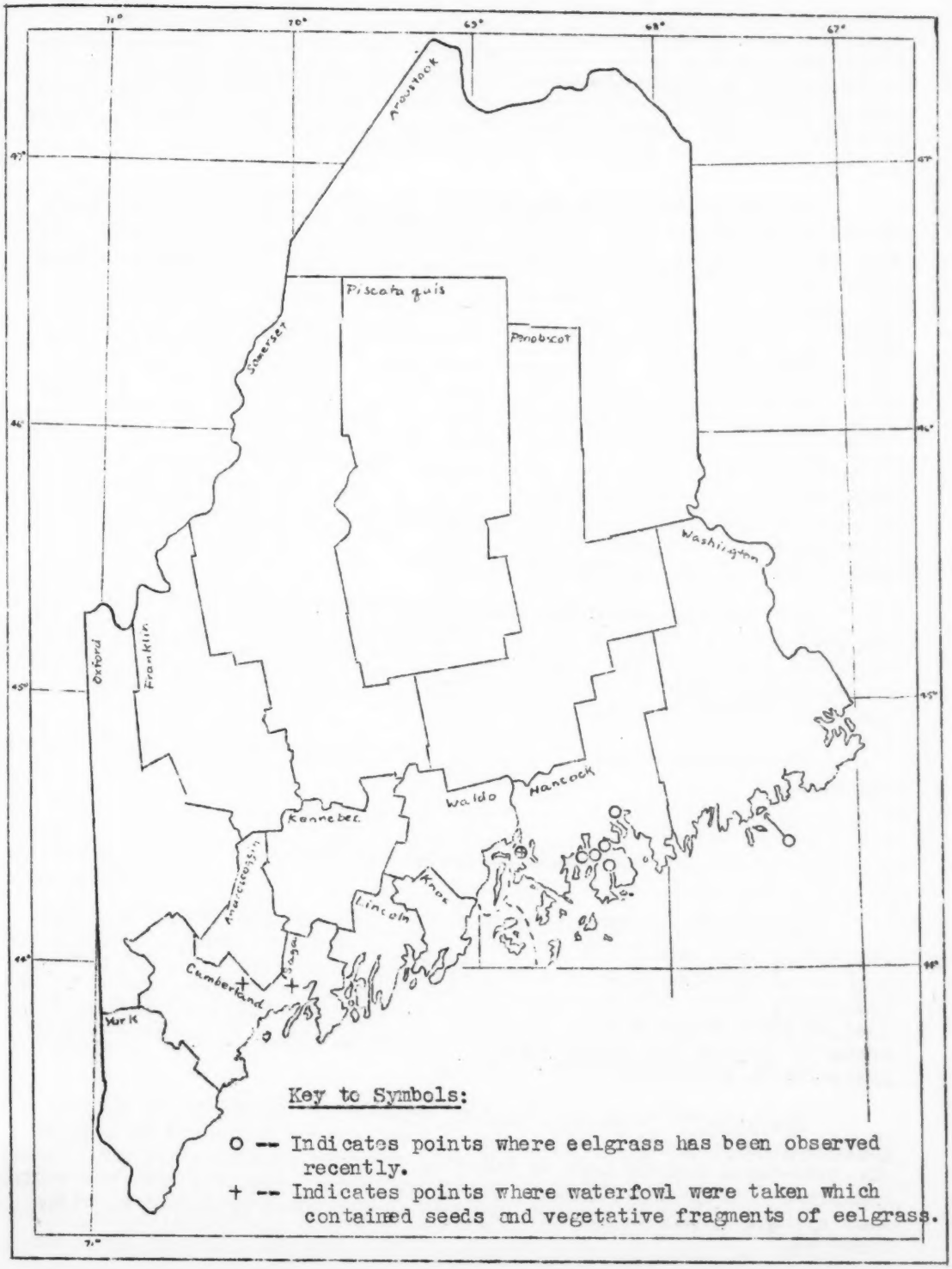

Fig. 1. Recent locality records of eelgrass (Zostera marina) in Maine.

Cooperative Wildlife Research Unit at the University of Maine collected specimens from thrifty eelgrass beds at Roque Island, Roque Bluffs, Washington County, Maine. An observer at Hancock Inlet, Hancock, Maine, reported that a noticeable amount of erosion had occurred during the period since eelgrass had disappeared, and that the plant had reappeared in 1936. He also indicated that there had been a gradual yearly increase in the abundance of the plant in Hancock Inlet.

The junior author is employed by the Maine Department of Inland Fisheries and Game as leader of a waterfowl project and has supplied the food analysis data. Certain sportsmen, collaborating with the food habits study being conducted by this Department, forwarded the digestive tracts of a number of waterfowl shot during October, 1939, at several points along the Maine coast. An analysis of the stomach contents of 3 black ducks (Anas rubripes) taken at West Brooksville, Hancock County, Maine, showed that each bird had ingested vegetative fragments and seeds of eelgrass, the latter ranging in number from 1 to 136 per bird. Another black duck collected at Pownal, Cumberland County, Maine, had eaten 387 seeds and some fragments of the plant. Of 5 black ducks taken in Merrymeeting Bay (juncture of the Androscoggin and Kennebec Rivers), 2 had ingested the seeds of eelgrass while all of them had consumed vegetative fragments. Three coots (Fulica americana) killed at Merrymeeting Bay had eaten seeds and fragments of the plant. The food of one of the above coots consisted of 12,556 eelgrass seeds.

From the foregoing observations and records it appears that eelgrass has become re-established and is producing seeds at several points along the Maine coast. Unless the wasting disease regains the ascendency, eelgrass should make a complete recovery and fill its biologic niche in the Maine coastal waters in the near future.

(University of Maine and Maine State Department of Inland Fisheries and Game).

BRIEF NOTES ON PLANT DISEASES

SCLEROTINIA ON CABBAGE IN GEORGIA: Cabbage drop disease has been identified in a commercial vegetable area in McIntosh County, Georgia, and a field of about 40 acres has been found in which there is a 100 percent infection. These cabbages were planted following a lettuce crop which has also suffered complete crop loss from disease caused by infection by this organism (Sclerotinia sclerotiorum (Lib) DBy). (Huey I. Borders, Georgia Agricultural Extension Service. March 5).

DAMPING-OFF IN GEORGIA TOBACCO SEED-BEDS: Considerable post-emergence damping-off has been observed in tobacco seed-beds throughout the flue-cured tobacco area in Georgia. Tobacco seedlings are quite small and are a good 30 days later in their development compared with their size last spring. (Huey I. Borders, Georgia Agricultural Extension Service. March 5).

BOTRYTIS DRY ROT OF GLADIOLUS CORMS IN NEW YORK: Gladiolus corms grown on Long Island were recently submitted by the U. S. Bureau of Entomology and Plant Quarantine for identification of the cause of a dry rot, which was found to be due to Botrytis cinerea (?). Sixty-two bulbs out of 109 were infected. The lesions were large, deep, shriveled, and sunken, and occurred mostly at the top of the corms. (Freeman Weiss, Division of Mycology and Disease Survey).

FEBRUARY WEATHER

(From Weekly Weather and Crop Bulletin for the week ending March 5).

Following an extremely cold January over most of the eastern half of the United States, temperatures for February averaged below normal in the south Atlantic area and in all sections south of the Ohio River and southern Missouri, although the departures from normal were not marked. In other sections of the country the month was warmer than normal, rather decidedly so from the Lake region westward and generally from the Rocky Mountains to the Pacific coast.

February was a relatively wet month, with much the greater portion of the country having decidedly above-normal precipitation. A limited area in the Central-East and most sections of the western Lake region and the upper Mississippi Valley, the north-central Great Plains and the central trans-Mississippi area had less-than-normal precipitation, but elsewhere the amounts were decidedly heavy. It was an outstandingly wet month west of the Rocky Mountains, except in parts of the far Southwest; also in the interior of the west Gulf area and in a belt extending from the lower Mississippi Valley northeastward to the interior of New England.

THE WINTER OF 1939-40

(From Weekly Weather and Crop Bulletin for the week ending March 5).

Figure 1 shows that the temperature for the 3 winter months, December 1939-February 1940, averaged below normal in nearly all sections east of the Great Plains, except for a considerable area from the central Lake region westward, with the greatest minus departures in the Southeast, largely due to the extremely cold January which was the coldest of record over a large southeastern area. From the Rocky Mountains westward the winter was decidedly warmer than normal, the greatest plus departures appearing in the Northwest and the Great Basin where the temperature averaged 5° or 6° above normal.

Figure 2 shows that precipitation was mostly above normal over the western half of the country, and decidedly scanty in much of the eastern half, especially in a wide belt extending from the Middle Atlantic States westward to the eastern Great Plains and from the Lake region westward to the Rocky Mountains. In some places the winter had less than half of the normal precipitation. The far Southwest was decidedly dry also, but otherwise precipitation was above normal rather generally from the Rocky Mountains westward.

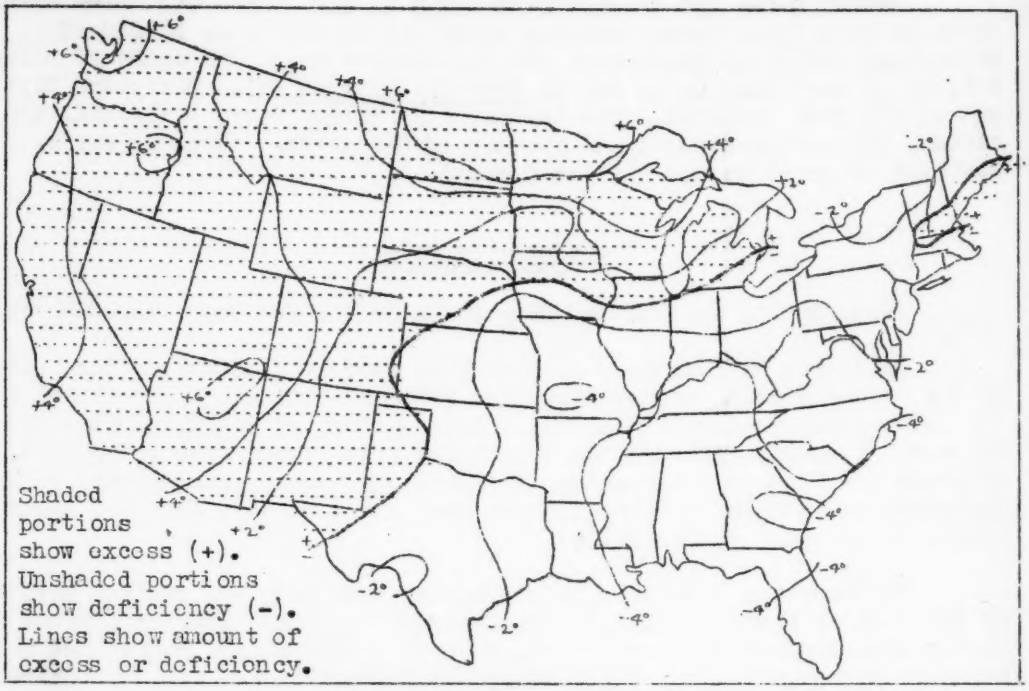

Fig. 1. Departure of mean temperature from the normal for the winter (December-February) 1939-40.

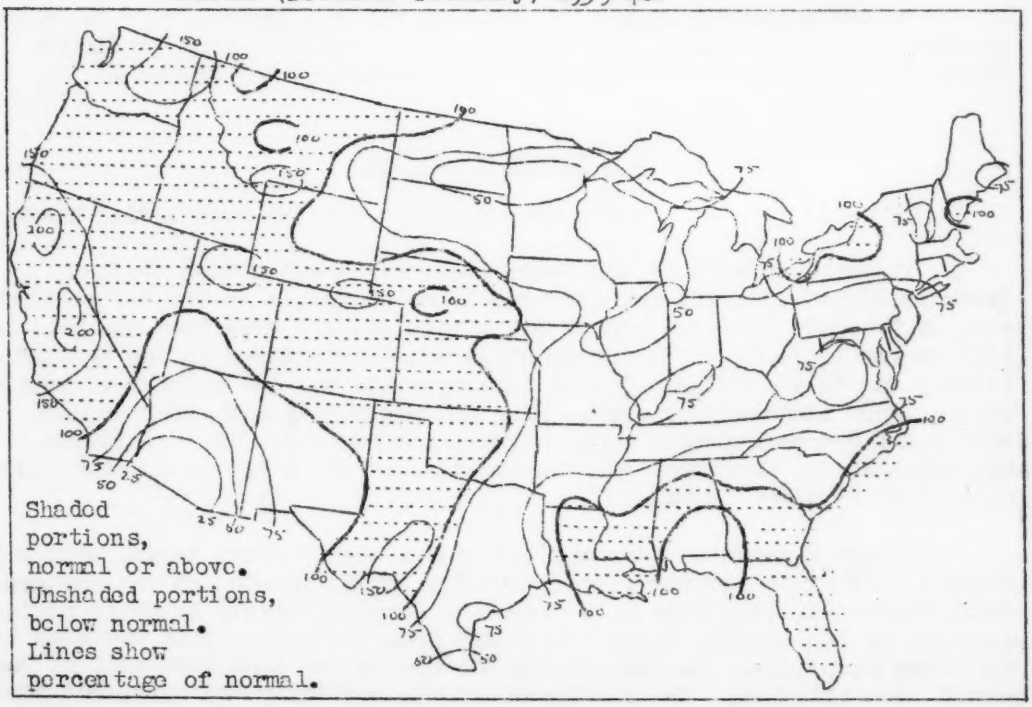

Fig. 2. Percentage of normal precipitation for the winter (December-February), 1939-40.